

Group number: May1727-28

Project title: Stand-alone Hybrid/Solar Power Plant

Advisor: Dr. Ajarapu

Eric Cole - WebMaster
Brian Gronseth - Solar Tech lead
Mike Trischan - Key Concept Holder
Nathaniel Byrne - Group Leader
Jeffrey Szostak - Wind Tech Lead
Matthew Lee - Communications Lead

○ **Weekly Summary (Short summary about what you did this week)**

The groups met to research current wind and solar technologies as well as grow our basic understanding of the technologies behind them. We also read through the documentation from two previous Senior Design groups and completed the Lab Exercises designed by one of the previous groups. We presented to the TA, Ankit, about our research and he gave us some advice before we present to Prof. Ajarapu next week.

○ **Past week accomplishments (please describe as what was done, by whom, when)**

I started a Simulink Model of the Wind Turbine and conversion of the output power to our system.
Solar team looked at the previous senior design team's work and learned about the block diagram they used, as well as photovoltaic effects
Researched how wind turbines worked and gave a presentation highlighting the factors that affect the outputted power generated by a wind turbine. Researched more possible turbines to be purchased online. Looked into the Simulink model used by the previous senior design teams. Solar team did stuff, too.
We started researching the fundamental mechanics that are associated with the concepts applying to our project.
Ankit Singhal, a Graduate Student for Professor Ajarapu, gave us the green light to continue research on Wind Turbines. We also verified what we've researched with him. We began communicating with different Wind Turbine manufacturers as well as communication with the Coover supervisor in regards to mounting a Wind Turbine on Coover's roof. We also began working with the last year group's Simulink models. We have yet to get them to work successfully.
Refresh on photo-voltaic effect. IV characteristics oh solar cells. Block diagram in the documentation. Experiment with the simulink model of solar panel.

Read about Power Point Tracking.
 Read about Panels in series and parallel combinations.
 Make power point slides about what you learned and send them to TA

○ **Pending issues (if applicable)**

Lack of Simulink skills with Simscape.
None
None
For the others, no. For myself, I have a heavy load of weekly work on my shoulders at the moment and variable items(such as this research) tend to fall later in the schoolwork pipeline.
We're not sure if we can mount a wind turbine on the roof of Coover.
None

○ **Individual contributions**

Eric Cole	Started and worked to improve on the wind side simulink model. Made a block diagram of the wind energy system.
Brian Gronseth	Made a short slide show about the solar panel setup and looked at the simulink pv diagrams
Mike Trischan	Researched how wind turbines worked and gave a presentation highlighting the factors that affect the outputted power generated by a wind turbine. Researched more possible turbines to be purchased online
Nathaniel Byrne	I made sure my team filled out the safety forms and gave them back to the supervising TA. Matthew Lee keeps doing his job in reminding us to fill these out that he compiles later.
Jeffrey Szostak	I began communication with the Coover Supervisor. I also researched different Wind Turbine manufacturers and contacted them about their products.
Matthew Lee	Created powerpoint for presentation to TA and prof. Researched previous groups' work Completed lab manual, background research on project

Hours Worked	Cumulative
Nathan	7
Bryan	4
Matt	6
Jeff	8
Mike	6
Eric	7

○ **Comments and extended discussion**

None
NA
Things are looking good
Nope.
None.
Feel like we need to set project requirements and make a plan for completing the work ASAP. Need to meet with Prof and better understand what he wants our group to accomplish.

○ **Plan for coming week (please describe as what, who, when)**

I plan to finish the wind side simulink model for next week.
Solar team needs to get a more solid idea of how the simulink pv diagram works, as well as the current and voltage relationship/curve with help from equations given in our documentation
Contact facilities planner to get an idea of what kind of turbines we can actually buy. Narrow down our wind turbine options-need to move fast on this since shipping may be awhile. Get the Simulink model to run smoothly
Continue researching the fundamental mechanics that are associated with the concepts applying to our project.
Discuss our Wind Turbine findings with professor Ajarapu and Ankit Singhal. We, as a group, also want to get the Simulink model to work properly.
<p>Wind</p> <p>Simulink model, create new model and test</p> <p>Pick out a few wind turbines to pick from and find information on the wind turbines.</p> <p>Contact FPM (or another organization if necessary) and begin plans for adding a wind turbine on the roof of Coover.</p> <p>Use the google drive for group storage</p> <p>Solar</p> <p>Simulink model, get existing model to work or create a new model</p> <p>Research solar equations</p> <p>Research solar models</p> <p>Complete lab manual</p> <p>Prepare new presentation for next week</p> <p>Use the google drive for group storage</p>

○ **Summary of weekly advisor meeting (if applicable/optional)**

Find example Simulink models on the internet to help develop our model.

Presented slides of what we learned in the previous week and figured out what our new objective was for the following week

Presented our research, discussed goals for next week

Prof was busy with meeting. We discussed about some research items such as solar pv characteristics and equations associated with wind.

Professor was not able to attend the meeting. We instead met with just Ankit Singhal. We discussed the concern about mounting a turbine on Coover. We also discussed possible problems with Simulink and how we can get past them. This primarily pertained to us finding problems with running the model and how he believes we can get past these problems.

Update power point presentation with equation, improve collaboration